

Conservation Biology Lab (BIOS 322/BIOS 522); Spring 2021

Instructor

Cassidy B. Johnson, Ph.D.

Office Hours: Virtual by appointment on Tuesday/Thursday. Please message to me to arrange a time!

Email: cbj5145@rice.edu

Meeting Times

Location: Virtual or Harris Gully Natural Area (field adjacent to Weiss College)

Time: Friday; 1:30PM-5:30PM

Textbook

No textbook will be required for this course. Required documents and readings will be provided on the course's Canvas page. Additional readings, resources, or other course documents will also be posted in Canvas.

Additional materials

The field equipment and reference guides needed for the course will be provided. Several of the class meetings will take place outdoors and students will need to prepare appropriately (closed-toed shoes, long pants, hat, sunscreen, water bottle are encouraged).

Course overview and description

This one-credit laboratory course is designed to address an authentic, local conservation issue facing the greater Houston area. Students will be responsible for the project design, the collection and analysis of data, and the dissemination of that data using communication methods suitable for a general audience. Students enrolled in BIOS322/524 are encouraged to have previously taken or be simultaneously enrolled in BIOS323; however, some exceptions may be given on an individual basis. Conservation biology is a multidisciplinary field; therefore, students from all academic fields are welcome to participate.

Rice University's Arboretum Committee has challenged the students of BIOS 322/522 to assist in the conservation of the Harris Gully Natural Area (HGNA). The HGNA is a protected green space on Rice's campus that is also a part of the Lynn R. Lowrey Arboretum. Through this class, students have a unique opportunity to make a lasting and positive conservation impact on both the Rice campus and the greater Houston community.

Course objectives

1. To gain an authentic experience in the design and implementation of a conservation-based project.
2. To gain familiarity with the benefits and challenges of the field of conservation and the concept of "reconciliation ecology."
3. To gain familiarity concerning the use biodiversity metrics for conservation practices and decision-making.
4. To synthesize a summary report of the research, including recommendations for continued conservation practices based on the data collected.
5. To gain experience designing effective conservation communication and/or educational strategies geared towards a non-science audience.

By the end of the course, you will be expected to:

1. Understand methods used to investigate and analyze biodiversity, with a focus on the challenges of working in urban settings.
2. Be able to synthesize scientific data into a written document, which will include an analysis and recommendations based on the data.
3. Be familiar with a diversity of methods and strategies that can be used to disseminate scientific information to a general audience.
4. Understand the role that urban conservation has in encouraging awareness in regards to habitat loss and global species decline.
5. Work collaboratively to design and implement a community-based project.

Project overview:

Student grades will be based on assessments tracking the progress of a project that focuses on the conservation HGNA. More details regarding each of the assessments above can be found in Canvas. The major components of this project are listed below:

1. Data collection from the Harris Gully Natural Area:

The class will design and carry out a biodiversity survey at the Harris Gully Natural Area*. This data will be analyzed and used for the development of individual, group projects.

2. The development of a urban conservation project based on the Harris Gully Natural Area:

Using the biodiversity data collected by the class, student groups will develop an individual project plan that is centered on the HGNA. This plan will incorporate one or several of the “motivations for conserving urban biodiversity” that have been discussed in class. The project will require that the group collect additional data specific to that group’s project. The proposed project can focus just on the HGNA, include other areas of campus, or extend to areas off campus. The final project will be presented to Rice’s Arboretum committee at the end of the semester.

3. The design of a communication piece for the project:

Each group will develop an educational, communication piece for their project. The communication piece can be visual, written, auditory, or digital in nature. Collecting survey data is also acceptable. Students will have a great deal of flexibility with this component of the project; however, they must act on the piece in some way. This means that if the group decides to write a series of blogs, they must find an outlet and get at least one blog published. If a poster is designed, it needs to be printed and displayed somewhere, etc.

****Students who have opted for 100% online and who will not be coming to campus will be given an equivalent assignment to perform. I will work with each student on a case-by-case basis to identify an alternative survey that will be able to be utilized as a part of the course project.***

BIOS 322/522 Grading:

Grades will be calculated out of 450 points. Grades will be distributed as follows:
 ≥90% A, 80-89% B, 70-79% C, 60-69% D, ≤59% F.

Assignment	Points	%
Canvas discussions (individual)	10	2
First project pitch (group)	30	7
Updated project presentation (group)	50	12
Peer feedback (individual)	20	4
Final project presentation (group)	100	22
Final project document (group)	100	22
Communication piece (group)	100	22
Participation (individual)	40	9
Total	450	100

Course Schedule (subject to change)

The course meets on Friday from 1:30PM to 5:30PM. The “lecture” components of this course will occur virtually via Zoom. The fieldwork component will take place on campus at the Harris Gully Natural Area. I will do my best to adhere to the schedule; however, due to the ever-changing nature of the pandemic and bad weather, I may need to alter the schedule. I will do my best to update you with any changes ASAP.

Date	Activity (subject to change)	Location
29-Jan	Introduction to course; Topic: Biodiversity & reconciliation ecology	Virtual class
5-Feb	Topic: Urban conservation	Virtual class
12-Feb	Topic: Conservation communication & engagement Guest speaker, Felice Yarbough; Urban Park Ranger, USFWS	Virtual class
19-Feb	Visit to HGNA, Methods work day & iNaturalist tutorial	Harris Gully Natural Area
26-Feb	Project work day	Harris Gully Natural Area
5-Mar	First project pitch & feedback session	Virtual class
12-Mar	Project work day	HGNA
19-Mar	Project work day	Harris Gully Natural Area
26-Mar	"Sprinkle day" No class	
2-Apr	Project update presentation - peer feedback	Virtual class
9-Apr	Project work day:groups meet with me individually	Harris Gully Natural Area
16-Apr	Project work day	Virtual/Harris Gully Natural Area
23-Apr	Mock presentation: schedule a virtual meeting time with me	Virtual one on one
30-Apr	Final project presentations with Arboretum committee	Virtual class

Attendance:

Because this class meets only once per week, it is my expectation everyone will do their best of to attend every class. However, I do recognize that Friday afternoons are popular times for medical and graduate school interviews. Please reach out to me in advance to let me know that you will be missing class. If you are missing a field day focused on collecting data for the entire class, I expect that you will make up the time and work. If you miss a project workday for your individual group, I (and your group partner) also expect that you will make up the work. Please note: a large part of your participation grade will be a peer evaluation, and your partner will be able to score your active participation in the data collection for the project! Please do not plan on missing any of the group presentation days. If you miss your presentation, you will receive a zero for that assignment. If you have a question or concern about attendance, please reach out to me ASAP.

COVID considerations:

Students are expected to follow all of the current university guidelines regarding COVID. When the class meets on campus for fieldwork, we will wear facemasks and be required to socially distance. Please make sure to bring what you need to work in the field because there will be no sharing of supplies. Before our first field event, I will remind everyone of what they need and ensure that all students have their own equipment.

Disabilities:

Any student with a disability that requires accommodation is encouraged to speak with me within the first two weeks of the class. The student is additionally encouraged to contact the Director of Disabled Student Services in the Ley Student Center.

Honor code:

It is the expectation of this class that all work produced is unique to that student or students. Plagiarism of any kind will not be tolerated. Any use of published and unpublished research, websites, or personal communication with experts needs to be clearly stated in presentations and in written documents. If you have any questions about a potential violation about the Rice University Honor Code, please contact me.

Collaboration with classmates is encouraged in this class; however, individual assignments are to be completed individually as requested. Any deviation from this may result in a grade in 0 for the assignment in question.